STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No.:	MO-0054623
Owner:	City of Troy
Address:	200 Main Street, Troy, MO 63379
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	Troy Wastewater Treatment Plant
Address:	264 East Highway 47, Troy, MO 63379
Legal Description:	See page 2
Receiving Stream & Basin:	See page 2
First Classified Stream and ID:	See page 2
USGS Basin & Sub-watershed No:	See page 2

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

See page 2

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

March 18, 2005
Effective Date

Doyle Childers, Director, Department of Natural Resources
Executive Secretary, Clean Water Commission

March 17, 2010
Expiration Date

Edward Galbraith, Director of Staff, Clean Water Commission

LEGAL DESCRIPTION & RECEIVING STREAM (continued)

Outfall #001
discontinued, moved to #003

Outfall #002

Legal Description:	SW ¼, NE ¼, NE ¼, Sec. 30, T49N, R1E, Lincoln County
Receiving Stream:	Cuivre River (P)
First Classified Stream and ID:	Cuivre River (P)(00152)
USGS Basin & Sub-watershed No.:	(07110008-050002)

Outfall #003

Legal Description:	NE ¼, SE ¼, NW ¼, Sec. 30, T49N, R1E, Lincoln County
Receiving Stream:	Town Branch (U)
First Classified Stream and ID:	Cuivre River (P)(00152)
USGS Basin & Sub-watershed No.:	(07110008-050002)

FACILITY DESCRIPTION (continued)

Outfall #001
discontinued, moved to #003

Outfall #002 - POTW - SIC #4952
Wet weather holding basin/peak flow settling basin/primary treatment.
Design flow is 2.88 MGD.

Outfall #003 - POTW - SIC #4952
This is the main outfall.
Influent lift station/extended aeration/breakpoint chlorination/dechlorination/sludge digestion/sludge land application/sludge disposal by contract hauler.
Design population equivalent is 13,000.
Design flow is 1.3 MGD.
Actual flow is 1.0 MGD.
Design sludge production is 234 dry tons/year.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #002 - Stormwater (Note 1)						
Flow	MGD	*		*	once/day	24 hr. total
Biochemical Oxygen Demand$_5$	mg/L		45		once/week	grab
Total Suspended Solids	mg/L		45		once/week	grab
pH – Units	SU	**		**	once/week	grab
Fecal Coliform(Note 2)	#/100mL	1000		400	once/week	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE April 28, 2005 . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Instream Monitoring(S1)						
Dissolved Oxygen(Note 3)	mg/L	*		*	once/quarter	grab
Temperature	°F	*		*	once/quarter	grab
pH	SU	*		*	once/quarter	grab
Ammonia as Nitrogen	mg/L	*		*	once/quarter	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE July 28, 2005 .						

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Parts I, II & III STANDARD CONDITIONS DATED October 1, 1980 and August 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #003						
Flow	MGD	*		*	once/day	24 hr. total
Total Suspended Solids***	mg/L		20	15	once/week	24 hr. composite
pH – Units	SU	**		**	once/week	grab
Fecal Coliform (Note 4)	#/100mL	1000		400	once/week	grab
Total Residual Chlorine (Notes 5 $ 6)	mg/L	0.01		0.01	once/week	grab
Ammonia as N						
May 1 – October 31	mg/L	2		1	once/week	grab
November 1 – April 30	mg/L	3		1.5	once/week	grab
Carbonaceous Biochemical Oxygen Demand$_5$***	mg/L	15		10	once/week	24 hr. composite
Dissolved Oxygen	mg/L	*****		*****	once/week	grab
Oil and Grease	mg/L	15		10	once/week	grab
Total Nitrogen	mg/L	*		*	once/month	grab
Nitrate + Nitrite	mg/L	*		*	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE April 28, 2005 . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Copper, Total Recoverable	mg/L	0.029		0.014	once/quarter****	24 hr. composite
Lead, Total Recoverable	mg/L	0.02		0.01	once/quarter****	24 hr. composite
Zinc, Total Recoverable	mg/L	0.345		0.172	once/quarter****	24 hr. composite
Phenols, Total	mg/L	0.1		0.05	once/quarter****	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE July 28, 2005 . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Whole Effluent Toxicity (WET) Test	% Survival	(See Special Condition #5)			once/year in September	24 hr. composite
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE October 28, 2005 .						

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Parts I, II & III STANDARD CONDITIONS DATED October 1, 1980 and August 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

* Monitoring requirement only.

** pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.0-9.0 pH units.

*** This facility is required to meet a removal efficiency of 85% or more.

**** Sample once per quarter in the months of March, June, September, and December.

***** The effluent shall contain a dissolved oxygen level of 5.0 mg/L or greater.

S1 – Instream monitoring shall be conducted immediately downstream of the confluence of Town Branch and the Cuirve River.

Note 1 – Only the wastewater in excess of the continuous wastewater treatment plant hydraulic capacity may be discharged through outfall #002.

Note 2 – Final Effluent Limitations for Fecal Coliform on Outfall #002 will become effective on April 1, 2008, however, monitoring and reporting are required upon issuance of this permit.

Note 3 – Dissolved Oxygen samples must be taken from one hour before to one hour after sunrise.

Note 4 - Final limitations and monitoring requirements for Fecal Coliform are applicable only during the recreational season from April 1 through October 31.

Note 5 - This permit contains a Total Residual Chlorine (TRC) limit.

a. If the TRC limit in this permit is 0.01 mg/L or 0.2 mg/L, you must use an analytical method that has a quantification limit of no greater than 0.05 mg/L TRC. For reporting purposes on the discharge monitoring report (DMR), all analytical values below 0.05 mg/L shall be reported as "<quantlim." All analytical values at or above the quantification limit of 0.05 mg/L shall be reported as the measured value. The permittee shall report the quantification limit in the remarks section of the DMR.

   The average monthly effluent values for TRC will be determined by assuming that analytical results below the quantification limit are equivalent to 0 mg/L when calculating the monthly average.

   The daily effluent value will be considered equal to 0 mg/L if it is below the quantification limit.

b. If no chlorine was used in a given sampling period, an actual analysis is not necessary. Simply report as "0 mg/L" TRC.

Note 6 - This treatment facility is designed to provide advanced treatment by the use of breakpoint chlorination. Chlorination may occur all months of the year.

C. SPECIAL CONDITIONS

1. This permit may be modified, or alternatively revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C), and (D), 304(b)(2) and 307(a)(2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
   (a) Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
   (b) Controls any pollutant not limited in the permit.
   The permit as modified or reissued under this paragraph shall also contain any other requirements of the Act then applicable.

2. All outfalls must be clearly marked in the field.

3. Permittee will cease discharge by connection to areawide wastewater treatment system within 90 days of notice of its availability.

4. This permit may be reopened and modified or alternatively revoked and reissued, to incorporate new or modified effluent limitations or other conditions, if the result of a wasteload allocation study, toxicity test, or other information indicates changes are necessary to ensure compliance with Missouri's Water Quality Standards.

5. Report as no-discharge when a discharge does not occur during the report period.

6. Water Quality Standards
   (a) Discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.
   (b) General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
      (1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
      (2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
      (3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
      (4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
      (5) There shall be no significant human health hazard from incidental contact with the water;
      (6) There shall be no acute toxicity to livestock or wildlife watering;
      (7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
      (8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

7. Sludge and Biosolids Use For Domestic Wastewater Treatment Facilities:
   (a) Permittee shall comply with the pollutant limitations, monitoring, reporting, and other requirements in accordance with the attached permit Standard Conditions.

8. This treatment facility is required to be operated by a person having a wastewater competency certificate of at least a "B" level.

C. SPECIAL CONDITIONS (continued)

9. The permittee shall submit an Inflow & Infiltration report twice a year with the August and February Discharge Monitoring Reports. The report shall address measures taken to eliminate sources of inflow and infiltration into the City's Collection system.

10. Whole Effluent Toxicity (WET) tests shall be conducted as follows:

SUMMARY OF WET TESTING FOR THIS PERMIT				
OUTFALL	A.E.C. %	FREQUENCY	SAMPLE TYPE	MONTH
003	100	once/year	24 hr comp.	September

(a) Test Schedule and Follow-Up Requirements

(1) Perform a single-dilution test in the months and at the frequency specified above. If the effluent passes the test, do not repeat the test until the next test period.
Submit test results along with complete copies of the test reports as received from the laboratory within 30 calendar days of availability to the WPP, Water Quality Monitoring and Assessment Section, P.O. Box 176, Jefferson City, MO 65102.

(2) If the effluent fails the test, a multiple dilution test shall be performed within 30 calendar days, and biweekly thereafter, until one of the following conditions are met:
(a) THREE CONSECUTIVE MULTIPLE-DILUTION TESTS PASS. No further tests need to be performed until next regularly scheduled test period.
(b) A TOTAL OF THREE MULTIPLE-DILUTION TESTS FAIL.

(3) The permittee shall submit a summary of all test results for the test series along with complete copies of the test reports as received from the laboratory to the WPP, Water Quality Monitoring and Assessment Section, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the third failed test.

(4) Additionally, the following shall apply upon failure of the third test: A toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE) is automatically triggered. The permittee shall contact WPP, Water Quality Monitoring and Assessment Section to ascertain as to whether a TIE or TRE is appropriate. The permittee shall submit a plan for conducting a TIE or TRE to the Planning Section of the WPP within 60 calendar days of the date of DNR's direction to perform either a TIE or TRE. This plan must be approved by DNR before the TIE or TRE is begun. A schedule for completing the TIE or TRE shall be established in the plan approval.

(5) Upon DNR's approval, the TIE/TRE schedule may be modified if toxicity is intermittent during the TIE/TRE investigations. A revised WET test schedule may be established by DNR for this period.

(6) If a previously completed TIE has clearly identified the cause of toxicity, additional TIEs will not be required as long as effluent characteristics remain essentially unchanged and the permittee is proceeding according to a DNR approved schedule to complete a TRE and reduce toxicity. Regularly scheduled WET testing as required in the permit, without the follow-up requirements, will be required during this period.

(7) If a previously completed TIE has clearly identified the cause of toxicity, additional TIEs will not be required as long as effluent characteristics remain essentially unchanged and the permittee is proceeding according to a DNR approved schedule to complete a TRE and reduce toxicity. Regularly scheduled WET testing as required in the permit, without the follow-up requirements, will be required during this period.

C. SPECIAL CONDITIONS (continued)

(8) If a previously completed TIE has clearly identified the cause of toxicity, additional TIEs will not be required as long as effluent characteristics remain essentially unchanged and the permittee is proceeding according to a DNR approved schedule to complete a TRE and reduce toxicity. Regularly scheduled WET testing as required in the permit, without the follow-up requirements, will be required during this period.

(9) All failing test results shall be reported to WPP, Water Quality Monitoring and Assessment Section, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the availability of the results.

(10) When WET test sampling is required to run over one DMR period, each DMR report shall contain information generated during the reporting period.

(11) Submit a concise summary of all test results with the annual report.

(b) PASS/FAIL procedure and effluent limitations:

(1) To pass a single-dilution test, mortality observed in the AEC test concentration shall not be significantly different (at the 95% confidence level; $p = 0.05$) than that observed in the upstream receiving-water control sample. The appropriate statistical tests of significance will be those outlined in the most current USEPA acute toxicity manual or those specified by the MDNR.

(2) To pass a multiple-dilution test:

(a) the computed percent effluent at the edge of the zone of initial dilution, Acceptable Effluent Concentration (AEC), must be less than three-tenths (0.3) of the LC_{50} concentration for the most sensitive of the test organisms; or,

(b) all dilutions equal to or greater than the AEC must be nontoxic. Failure of one multiple-dilution test is an effluent limit violation.

(c) Test Conditions

(1) Test Type: Acute Static non-renewal

(2) Test species: Ceriodaphnia dubia and Pimephales promelas (fathead minnow). Organisms used in WET testing shall come from cultures reared for the purpose of conducting toxicity tests and cultured in a manner consistent with the most current USEPA guidelines. All test animals shall be cultured as described in the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms.

(3) Test period: 48 hours at the "Acceptable Effluent Concentration" (AEC) specified above.

(4) When dilutions are required, upstream receiving stream water shall be used as dilution water. If upstream water is unavailable or if mortality in the upstream water exceeds 10%, "reconstituted" water will be used as dilution water. Procedures for generating reconstituted water will be supplied by the MDNR upon request.

(5) Single-dilution tests will be run with:

(a) Effluent at the AEC concentration;

(b) 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and

(c) reconstituted water.

(6) Multiple-dilution tests will be run with:

(a) 100%, 50%, 25%, 12.5%, and 6.25% effluent, unless the AEC is less than 25% effluent, in which case dilutions will be 4 times the AEC, two times the AEC, AEC, 1/2 AEC and 1/4 AEC;

(b) 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and

(c) reconstituted water.

(7) If reconstituted-water control mortality for a test species exceeds 10%, the entire test will be rerun.

D. SCHEDULE OF COMPLIANCE

Permittee shall comply with the Final Effluent Limitations and Monitoring Requirements for Fecal Coliform on page 3 of this permit by April 1, 2008, according to the following schedule:

April 1, 2006 - Submit an engineering report, plans, and specifications, prepared by a professional engineer registered in the State of Missouri, to meet the Fecal Coliform limits on page 3 of this permit.

April 1, 2007 – Submit a progress report on status of meeting the Fecal Coliform limits.

April 1, 2008 – Permittee is responsible for the facility meeting the Fecal Coliform limits of this permit.

SUMMARY OF TEST METHODOLOGY FOR WHOLE-EFFLUENT TOXICITY TESTS

Whole-effluent-toxicity test required in NPDES permits shall use the following test conditions when performing single or multiple dilution methods. Any future changes in methodology will be supplied to the permittee by the Missouri Department of Natural Resources (MDNR). Unless more stringent methods are specified by the DNR,the procedures shall be consistent with the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms,

Test conditions for Ceriodaphnia dubia:

Test duration:	48 h
Temperature:	25 ± 1°C Temperatures shall not deviate by more than 3°C during the test.
Light Quality:	Ambient laboratory illumination
Photoperiod:	16 h light, 8 h dark
Size of test vessel:	30 mL (minimum)
Volume of test solution:	15 mL (minimum)
Age of test organisms:	<24 h old
No. of animals/test vessel:	5
No. of replicates/concentration:	4
No. of organisms/concentration:	20 (minimum)
Feeding regime:	None (feed prior to test)
Aeration:	None
Dilution water:	Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness.
Endpoint:	Pass/Fail (Statistically significant Mortality when compared to upstream receiving water control or synthetic control if upstream water was not available at $p \leq 0.05$)
Test acceptability criterion:	90% or greater survival in controls

Test conditions for (Pimephales promelas):

Test duration:	48 h
Temperature:	25 ± 1°C Temperatures shall not deviate by more than 3°C during the test.
Light Quality:	Ambient laboratory illumination
Photoperiod:	16 h light/ 8 h dark
Size of test vessel:	250 mL (minimum)
Volume of test solution:	200 mL (minimum)
Age of test organisms:	1-14 days (all same age)
No. of animals/test vessel:	10
No. of replicates/concentration:	4 (minimum) single dilution method 2 (minimum) multiple dilution method
No. of organisms/concentration:	40 (minimum) single dilution method 20 (minimum) multiple dilution method
Feeding regime:	None (feed prior to test)
Aeration:	None, unless DO concentration falls below 4.0 mg/L; rate should not exceed 100 bubbles/min.
Dilution water:	Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness.
Endpoint:	Pass/Fail (Statistically significant Mortality when compared to upstream receiving water control or synthetic control if upstream water was not available at $p \leq 0.05$)
Test Acceptability criterion:	90% or greater survival in controls